AMENDMENTS TO THE SPECIFICATION:

Please amend the specification as follows:

Amend the paragraph beginning at page 3, line 23, as follows:

An object of the present invention is to provide a dielectric waveguide and a method of production thereof to attain small ~~in~~ size and ~~lower in~~ low loss (high unloaded Q).

Amend the paragraph beginning at page 4, line 23, as follows:

Fig. 4 is a perspective view of a dielectric waveguide having a 45 degrees ~~bent~~ oriented structure according to a third embodiment of the present invention; and

Amend the paragraph beginning at page 5, line 12, as follows:

A single crystal magnesium oxide (MgO) block 101 is a rectangular ~~parallelopiped~~ parallelepiped block consisting of MgO single crystals. Six faces of the MgO block 101 show any crystal orientation face among the faces of (100), (010), or (001). A copper oxide superconducting film 104 is a Gd-BaCu-O material having a main component of $GdBa_2Cu_3O_x$ (x=6.8 to 7.0). The copper oxide superconducting film 104 is formed at a thickness of about 0.8 μm on two XZ faces and two XY faces among six faces of the MgO block 101. At this time, the copper oxide superconducting film 104 is formed so as to have a face in a c-axis crystal orientation perpendicular to the surface of the MgO block 101. The detail will be explained with reference to Fig. 2A to Fig. 2D later.

Amend the paragraph beginning at page 6, from line 26 to page 7, line 11, as follows:

When an electromagnetic field signal having a central frequency of 15GHz and a band of about 1GHz is allowed to pass through in a TE_{01} mode, if the sizes of the input port face and the output port face of the MgO block 101 are set to about 0.4 cm square, a frequency of a transmission signal becomes equal to a cutoff frequency or more, and ~~it can be used~~ such a block is suitable for the present invention. In this case, it does not matter whether the size in the Y direction is the same with the size in the Z direction or not. In the frequency region described above, at the operating temperature of about 70 K, and with the length of the dielectric waveguide to be about 5 to 7 cm, a MgO block 101 having dielectric loss (tan δ) of 10^{-5} or less can be used.

Amend the paragraph beginning at page 7, line 22, as follows:

Fig. 2A shows a method of production of the MgO block 101 on which the copper oxide superconducting film 104 is formed in Fig. 1.

Amend the paragraph beginning at page 7, from line 25 to page 8, line 10, as follows:

First, the MgO block 101 (e.g., in Fig. 2A) having a surface of (001), (100) or (010) is prepared. As shown in Fig. 2C, a cubic crystal unit cell 122 of the MgO block 101 has the same length of about 4.2 nm for all of the a-axis, b-axis, and c-axis. In this case, the axis length is usually represented by one kind of the axis length. A ~~lump~~ piece of ~~the~~ MgO single crystal is cut in a predetermined direction to form a MgO block 101. Six faces of the MgO block 101 come to any of faces (001), (010) or (100). These faces (001), (010) and (100) have substantially the same physical properties. That is, it is possible to form a copper oxide superconducting film 104 on any face

among six faces of the MgO block.

Amend the paragraph beginning at page 10, line 5, as follows:

Fig. 3 shows a dielectric waveguide according to the second embodiment of the present invention. The difference between the dielectric waveguide of the second embodiment and the dielectric waveguide of the first embodiment (Fig. 1) will be explained below. Other points are the same, and X, Y and Z reference axes are included in the same manner as in Fig. 1. Indium 102 and 107 are provided as a buffer in the dielectric waveguide in Fig. 1. However, a buffer is not used in the dielectric waveguide in Fig. 3.

Amend the paragraph beginning at page 11, line 13, as follows:

Fig. 4 shows a dielectric waveguide having a 45° ~~bent~~ oriented structure according to the third embodiment of the present invention. The dielectric waveguide has a transmission line having a 45° ~~bent~~ oriented structure including a portion bent at a right angle. A single crystal MgO block 201 is a rectangular parallelepiped block which is bent at a right angle, and has a face ~~of~~ oriented at 45 degrees ~~bent~~ to the XY face and YZ face, and oriented at 90 degrees ~~bent~~ to the XZ face. Hereinafter, this face is called a 45 degrees ~~bent~~ oriented face. In the surfaces of the MgO block 201, each face of the XY face, XZ face and YZ face is any crystal orientation face among (100), (010) or (001). An input electric signal (electromagnetic wave) 211 is inputted in the input port face, and an output electric signal (electromagnetic wave) 212 is outputted from the output port face. The 45 degrees ~~bent~~ oriented faces are crystal orientation faces (011), (101) or (110).

Amend the paragraph beginning at page 13, line 12, as follows:

Further, the main component of a copper oxide superconducting film 205 is a Y-Ba-Cu-O series substance consisting of $YBa_2Cu_3O_x$ (x=6.8 to 7.0), and the film is formed on a single crystal MgO block 206. The MgO block 206 has a surface of face (001), (100) or (010). The copper oxide superconducting film 205 is formed on the (001), (100) or (010) surface of the MgO block 206 in a form of a c-axis crystal orientation perpendicular to the face. The area of the copper oxide superconducting film 205 corresponds to the area on the 45 degrees ~~bent~~ oriented face of the MgO block 201. The copper oxide superconducting film 205 comes into contact with the 45 degrees ~~bent~~ oriented face of the MgO block 201 and is fixed by the following method.

Amend the paragraph beginning at page 13, from line 27 to page 14, line 17, as follows:

First, a bonding film 208 made of a silver paste of the same kind as that described above is applied on the bottom face and the left side face of a sintered MgO block 207 at the thickness of about 30 μm. Next, the MgO block 207 and the MgO block 201 are brought into intimate contact with each other, sandwiching therebetween the MgO block 206 on which the copper oxide superconducting film 205 is formed, and fixed with a fixing jig. After being dried in a state of being fixed, the bonding film 208 composed of the silver paste is formed by sintering in an oxidation atmosphere (in the atmospheric condition or in oxygen atmosphere) at a temperature of 800°C or higher, and fixed. The bonding film 208 bonds between the MgO block 207 and the pedestal 202, and bonds between the MgO block 207 and the MgO block 206. Thereby, the copper oxide

superconducting film 205 comes in contact with the 45 degrees ~~bent~~ oriented face of the MgO block 201 and is fixed.

Amend the paragraph beginning at page 14, line 18, as follows:

The MgO block 201 has a 45 degrees ~~bent~~ oriented face. The 45 degrees ~~bent~~ oriented face has a surface of (011), (101) or (110), and it is difficult to realize epitaxial growth of a copper oxide superconducting film on this surface. Accordingly, a dielectric waveguide having a 45 degrees ~~bent~~ oriented structure is formed by allowing the copper oxide superconducting film 205 to come into close contact with the 45 degrees ~~bent~~ oriented face mechanically, as described above.